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ANNUAL REPORT

on the

PUBLIC HEALTH AND
SANITARY CONDITION



of the

Rural Sanitary District of Penrith

For the year 1941.

F. W. GAVIN,

M.D., CH.B.(Edin.), D.P.H.,

MEDICAL OFFICER OF HEALTH.

Penrith :

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—
1942.

MANSION HOUSE,
PENRITH,

14th August, 1942.

To the Chairman and Members of the Penrith Rural District Council.

Mr. Chairman, Miss Dickenson and Members,

I have pleasure in presenting my Annual Report upon the health of the District for the year 1941.

The report has been still further curtailed in accordance with instructions contained in Circular 2604 of the Ministry of Health dated 24th March, 1942.

The year was noteworthy for an outbreak of Trichiniasis which occurred during the period 20th January to 8th February inclusive ; fortunately there were no deaths among patients resident in the Penrith Rural area.

An outbreak of Flexner's dysentery (Flexner X) occurred at Lazonby in October, and the disease was traced to infection imported from a neighbouring area.

Whooping Cough was epidemic in the district during the Spring and Summer months.

13 deaths were caused by Cancer, and the average age at death was 62 years.

In conclusion, I wish to express my thanks for the courtesy and help extended to me by the Chairman and Members of the Council, and to the Clerk of the Council and Sanitary Inspectors for their co-operation and assistance.

I have the honour to be,

Mr. Chairman, Miss Dickenson and Members,

Your obedient Servant,

F. W. GAVIN,

Medical Officer of Health.

STATISTICS AND SOCIAL CONDITIONS OF THE AREA.

Area of the District (in acres)	.....	.....	.....	.....	181,531
Number of Inhabited Houses	.....	.....	.....	.....	3,168
Rateable Value	.....	.....	.....	.....	£40,962
Sum represented by a Penny Rate	.....	.....	.....	.....	£173 3s. 9d.
Live Births—	Male.		Female.	Total.	
Legitimate	..... 78	.....	..... 76	.....	154
Illegitimate	..... 4	.....	..... 2	.....	6
				-----	160

Birth Rate per 1,000 of population		..	..	.....	12.71
Birth Rate for England and Wales				.....	14.20
Still Births—	Male.		Female.	Total.	
Legitimate	..... 3	.....	..... 2	.....	5
Rate per 1,000 total births	.....		.....	.....	31.25
Deaths—	Male.		Female.	Total.	
	86	.....	54	.....	140
Death Rate per 1,000 population		.....	.....	.....	11.12
Death Rate for England and Wales		.....	.....	.....	12.90
Deaths from Puerperal Causes	.....		.....	.....	Nil
Maternal Mortality Rate	.....		.....	.....	Nil
Death Rate of Infants under one year—					
All Infants per 1,000 live births.....		.....	.....	.....	84.84
Legitimate Infants per 1,000 live births				.....	84.84
Illegitimate Infants per 1,000 live births				.....	Nil
Infantile Death Rate for England and Wales.....				.....	59.00
Deaths from Cancer (all ages)	.....		.....	.....	13
Deaths from Measles (all ages)	.....		.....	.....	Nil
Deaths from Whooping Cough (all ages)	.....		.....	.....	Nil
Deaths from Diarrhoea (under two years of age)	.....		.....	.....	Nil

SOCIAL CONDITIONS OF THE AREA.

The area of the district is 181,531 acres. The lime works at Flusco, Prospect Hill, Blencowe, Red Hills, the alabaster works at Little Salkeld, the brick works at Culgaith, and some quarries are the only local industries, but agricultural work, however, remains the chief source of employment in the district.

There is no form of employment carried on which has a detrimental effect on the health of the workpeople.

INFANTILE MORTALITY, 1941.

Prematurity :—

2 days.

1 week.

2 weeks.

2 weeks.

2 weeks.

Congenital Abnormality :—

12 hours.

4 days.

2 weeks.

Convulsions :—

2 days.

Congenital Debility :—

2 months.

Broncho-pneumonia :—

2 months.

2 months.

Bronchitis :—

3 months.

Influenza :—

1 week.

GENERAL PROVISION OF HEALTH SERVICES IN THE AREA.

The provision of Health Services in the Area is as follows :—

1. The Medical Officer of Health for the Area has a similar appointment with the Urban District Council, and he also acts as Assistant County Medical Officer of Health for the Cumberland County Council. His qualifications are M.D., Ch.B.(Edin.), D.P.H.

The Sanitary Surveyor has a full time appointment. His qualifications are the Diploma of the Royal Sanitary Institute and Diploma as Meat and Food Inspector.

The additional Sanitary Surveyor also has a full time appointment. His qualifications include the Diploma of the Royal Sanitary Institute.

There are also two workmen employed to attend to the water supplies of the area, and two unqualified assistants have been called up for service in His Majesty's Armed Forces.

2. With regard to Laboratory facilities and Hospital Services, no changes have been made during the period under review.

SANITARY CIRCUMSTANCES OF THE AREA.

No action has been taken by the County Council in pursuance of Section 57 of the Local Government Act, 1929, nor has any action been taken under Section 307 or Section 320 of the Public Health Act, 1936.

I am obliged to the Sanitary Surveyor for the following report :—

Water.

In view of additional work and reduction of staff, I am not in a position to give a lengthy detailed report upon the water supplies in the area. However, with the construction of new camps, and government works, the Council's Water Works have been subjected to a great strain, but, fortunately, up to the time of making my report, a constant supply has been maintained to all places.

It has been necessary, owing to the introduction of certain works, to make considerable extensions to service mains in parts of the area, causing severe pressure and additional work upon our man power, which, of course, is very limited. The location of these various extensions can not be mentioned in this report under present war conditions owing to the nature of the departments concerned. Therefore this attenuated report must suffice until the time arrives when more detailed information can be divulged.

All water supplies are now in proper working order, the chlorination plant has been installed at the Regional Head Works and is in operation, and regular analyses are made of all supplies.

Drainage and Sewerage.

The question of sewerage is under constant consideration and the more urgent and difficult schemes requiring attention are those relating to Kirkoswald, Skirwith, Greystoke and High Hesket, but the necessary work has had to be postponed owing to war conditions.

Closet Accommodation.

Owing to the extension of the Council's water supply to outlying districts, conversion of privies to the water carriage system still continues to be carried out, but this work has been curtailed owing to war conditions.

In the majority of these cases drainage is by means of a septic tank in consequence of their isolation and the non-availability of a public sewer.

Public Cleansing.

The question of refuse collection and disposal in this district has been carefully considered for some years past, and good progress has been made with this class of work. Suitable tips have been provided capable of taking refuse from these places for a period of from fifteen to twenty years.

Swimming Baths and Pools.

There are no public swimming baths in the district, and no privately owned swimming baths or pools in the area are open to the public.

There are, however, school swimming baths at Culgaith and Hunsonby, where frequent changes of water are necessary to ensure satisfactory conditions. Regular visits and inspections are made to these places.

Eradication of Bed Bugs.

No action of any kind was required during the year under review.

Schools.

A general inspection of all schools in the area has been carried out, and notices or informal letters sent to the Managers and other persons concerned. It has not been found possible to put all the necessary work in hand at once, as most of the Schools are Church Schools and short of capital. However, satisfactory progress is being made, and all Schools in the area should have reached a satisfactory standard during the next two or three years.

INSPECTION AND SUPERVISION OF FOOD.

There are a large number of persons in this district registered as Milk Producers. The Register is made up as follows :—

Tuberculin Tested	.....	26
Accredited	.....	26
Wholesale only	.....	386
Wholesale and Retail	.....	93
Retail only	.....	152
Butter.....	.....	186

During the period under review 155 samples of milk were taken for analysis, and the results were :—

From Schools :—

Samples taken	.....	20
Satisfactory	.....	12
Unsatisfactory	.....	8

From T.T. Producers :—

Samples taken	.....	49
Satisfactory	.....	30
Unsatisfactory	.....	19

From Accredited Producers :—

Samples taken	.....	48
Satisfactory	.....	33
Unsatisfactory	.....	15

From Ungraded Producers :—

Samples taken	.....	38
Satisfactory	.....	13
Unsatisfactory	.....	25

Three ungraded samples were found to be positive for tubercle bacilli.

Inspection and Supervision of Food.

The area is a very large one and of a scattered nature, calling for a lot of time and travelling when inspecting the various farms.

The Rural Council now co-operate with the County Council in the collection and analysis of samples of milk. This arrangement is working satisfactorily, and has resulted in a more efficient system of sampling.

TRICHINIASIS or TRICHINOSIS.

The outbreak of this disease in the early part of 1941 is the first recorded instance of its presence in this area, but outbreaks were also recorded at Wolverhampton, Harpenden and Birmingham at about the same time, and it is quite probable that the disease is more widespread and of more frequent occurrence than has hitherto been thought.

In this connection I would like to mention that there was a suspected small outbreak localised in Carlisle in 1937, and 2 patients ill at that time were tested by Dr. Beeson in May, 1941, and found to be positive reactors to intra-dermal skin tests ; and the likelihood is that many other unrecorded outbreaks have taken place in this country.

ETIOLOGY.

Parasite.

The casual parasite, a nematode (*trichinella spiralis*), occurs in the flesh of many different animals. The rat is considered to be the chief carrier, but many other warm blooded animals may be affected including pigs, dogs, cats, bears, pigeons, etc., as well as human beings.

During the process of digestion, larvae are set free and develop into mature worms which infest the intestinal canal and the embryos, which are discharged into the blood stream, find their way to the muscles and organs of the host.

In the brain, heart and lungs, a somewhat acute inflammatory reaction is excited which destroys the parasite. The parasite may remain in the muscles of the host in its larval state throughout life, and it is computed that these muscles may be infective for a period of twenty-five years.

Infection of swine can be attributed to :—

- (a) inclusion of trichinosed meat in non-sterilised pig food (*i.e.* garbage containing portions of pork, bacon or ham) ;
- (b) consumption of pig food contaminated by excreta of infected rats or infected cats (either before or after sterilisation owing to carelessness in allowing access to food by rats or cats) ;
- (c) consumption of infected rats (disputed by certain authorities in the United States of America).

It will therefore be realised that the provisions of the Foot and Mouth (Boiling of Foodstuffs) Order, 1932, which requires the boiling of pig swill for at least one hour, must be strictly enforced.

Human Infection.

The consumption of inadequately cooked trichinised pork or pork products will give rise to the disease, although the eating of such meat does not necessarily cause any definite symptoms. The factors concerned appear to be :—

- (a) amount of infected meat consumed ;
- (b) degree of infection of meat consumed ;
- (c) slight human infection only with no apparent symptoms ;
- (d) probability of immunity being developed by small sub-infective dosage (children appear less likely to be infected) ;
- (e) one attack appears to confer immunity or partial immunity.

Clinical Symptoms.

The clinical symptoms noted in the Penrith outbreak were sudden swelling of the eyelids and face without albuminuria, together with malaise and a swinging temperature, followed later by generalised and frequent muscle pains, chiefly in the limbs, back of neck and trunk, accompanied by local swelling and stiffness of the legs and arms. Some patients complained of extreme weakness and some were anæmic, but gastro-intestinal symptoms were infrequent, although several cases complained of constipation. At least two cases had a clinical resemblance to pneumonia. Convalescence was extremely slow in our severe cases, and two fatal cases were noted. It is interesting to record that only one patient apparently had sub-ungual hæmorrhages.

Confusion with Influenza.

At least three cases of trichinosis were wrongly diagnosed as "gastric influenza." One of these cases (female, aged 48 years) was admitted to the Cumberland Infirmary, Carlisle, as a case of pneumonia with empyema, following influenza.

On admission this patient showed on blood film examination 9% eosinophilia with total white cell count of 16,000, and on 28th February when still an in-patient at the Infirmary, her eosinophilia had risen to 12% and the white blood count was still 16,000.

Dr. Faulds reports "Portion of left deltoid shows numerous encysted motile trichina spiralis" on 10th March, 1941. This patient made a complete recovery, although symptoms of oedema round the lower legs and feet remained for five or six months after discharge, together with a certain amount of muscle weakness.

Eosinophilia.

In 36 cases blood counts were carried out by the Pathologist, Cumberland Infirmary, Carlisle, and the results were as follows:—

Eosinophilia of from 40% to 72%	.....	14 cases
„ of from 10% to 40%	.....	19 cases
„ of from 4% to 10%	.....	2 cases
„ of 3%	.....	1 case (fatal)
„ less than 3%	.....	Nil

Notes on Fatal Cases.

(1). Mrs. H. (aged 48) died in the Cumberland Infirmary, Carlisle, on 19th March, 1941, after an illness of $7\frac{1}{2}$ weeks. This case showed an eosinophilia count of only 3%, and a total white blood count of 18,000. At postmortem, Dr. Faulds reported trichina positive in all muscles examined except the myocardium. The certified cause of death was "pulmonary embolism and trichinosis."

2. Mrs. T. (aged 48) died at her home on 9th February, 1941, after an illness of three weeks. The certified cause of death was "cerebral thrombosis after influenza." From details of the onset and course of the illness given by the relatives (two of whom had had the disease) there can be little doubt that death was due to trichinosis.

The case mortality was 3.3%, and in this connection it would seem probable that there were a number of missed cases owing either to the mildness of the symptoms or the failure of patients to call in medical aid.

History of the Penrith Outbreak.

On 11th February, 1941, suspected cases of this disease were brought to my notice by two local medical practitioners. Contact was immediately made with the veterinary surgeon responsible for meat inspection at the Penrith Municipal Abattoir and also with the Medical Officer of Health for the City of Carlisle (who communicated with the Superintendent of the City Abattoir), when it was established that there had been no suspected carcasses dealt with at either Penrith or Carlisle. The outbreak was immediately reported to the County Medical Officer of Health and to the Ministry of Health.

On 24th February, Colonel T. Maddock of the Ministry of Health, arrived in Penrith, accompanied by Professor Leiper of the London School of Hygiene and Dr. Paul B. Beeson (Harvard), to investigate the outbreak.

The Ministry of Health investigation continued during the period 25th February to 4th March, 1941, inclusive. A supplementary enquiry was later undertaken by Colonel Maddock and Dr. Beeson during the period 4th to 7th May, 1941, inclusive, when skin tests were made upon known cases, contacts and others. Dr. Beeson's observations upon these skin tests are included, with his permission, at a later stage in this report.

The total number of cases notified by local doctors numbered 30 in the Penrith Urban area, 8 in the Penrith Rural area, and 2 in the area of the North Westmorland Rural District Council, making a total of 40 notified cases. Additional cases were found during the investigations, and a graph is appended showing the daily number of cases occurring during the outbreak. The first known case occurred on 20th January and from that date to the 8th February, 50 definite cases and 10 suspected cases came to my notice, no less than 30 of them in the nine days commencing 24th January, 1941.

During the course of the investigation carried out by Colonel Maddock, it was found that 36 patients stated that sausages had been purchased by them from a Penrith Pork Butcher (A) retailing sausages in the town and the surrounding district, and, further, that eight patients obtain sausages from a Westmorland Pork Butcher (B). Pork Butcher B sells sausages in Penrith on market days. These sausages were consumed at a material time to fit in with the date of onset.

40 patients gave a history of onset of illness between January 20th and February 1st. In the weeks ending January 11th, 18th and 25th, the number of purchases of sausages for the families in which cases occurred was 24, 49 and 34 respectively.

Seven patients nibbled raw sausages, which was their habit, and one patient ate them lightly cooked. Three patients in one family ate raw sausages on January 18th, two of them became ill on January 20th and the third on January 22nd.

Pork Butcher A has two shops in the town, one for the pork trade and another for that of a general butcher. He therefore receives porkers, sows and plucks. He had received no foreign meat for three or more months, and he manufactures his own sausages, which are made up of 30—35% of sow meat, up to 40% of meat with beef, and to this a baked flour and seasoning is added. The mixture is filled into hog's casings. He makes sausages daily, except on Sunday and Monday, and one half of the quantity of manufacturing pork received in a week is carried over to the Wednesday of the week following. Thus, manufacturing pork received on a Monday may not be disposed of completely as sausages until Wednesday of the week following. Colonel Maddock obtained a list of all pig carcasses received by Pork Butcher A during the weeks ending January 11th, 18th and 25th. All came from the local municipal abattoir through the Wholesale Meat Supply Association, and the list was found to be correct.

Pork Butcher B, residing in Westmorland, has a stand in the Penrith Market for the sale of sausages and black puddings, both of which he sells on Tuesdays and Saturdays. During this period Pork Butcher B received from the same source as Pork Butcher A a precisely similar supply, *e.g.*, if Pork Butcher A got one half of sow X, Pork Butcher B got the other half. Thus the raw material for their sausages was strictly comparable.

The method adopted in the preparation of sausages by Pork Butcher B is substantially the same as that of Pork Butcher A, but there appears to have been some little difference in the matter of sausage casings. There are apparently four types of hog casings :

wide, medium, medium-narrow and narrow. During January and up to the 15th February, Pork Butcher B was unable to obtain his customary medium sized casings, but was compelled to fall back on the narrow.

Both Butchers therefore must have disposed of approximately the same quantity of sausages. Neither sold sausage meat ; there was a keen demand for sausages at the time, and there is no doubt that the weight of sausages disposed of locally by both retailers was the same, but their sausages were of a different size. Pork Butcher A used medium casings throughout, while Pork Butcher B for the first six weeks of the year used "narrow." It was observed that amongst Pork Butcher A's customers there were 36 known cases of trichinosis as compared with 8 of Pork Butcher B's. It may be that the greater number of sausages would have meant more consumers, and the greater number of persons at risk. Against this is to be weighed the smaller dose in the "narrow" sausage, and, what is probably of greater importance, the better cooking of the smaller sausages. Colonel Maddock states that he could see no other way of accounting for the great disparity in the number of cases as between the two vendors, and that no sausage makers other than A and B were concerned.

The next point to be considered is the raw material received from the abattoir. After investigation of the information received, it would appear from sales of sausages during the material time that sows from five piggeries could be suspected. Further enquiries reduced these piggeries to two, one in the Urban area and one in the Rural area of Penrith.

The vendor of the pig in the Rural area had never fed his pig on swill, and of the carcasses of 16 pigs, 1 cat and 8 rats subsequently obtained on this farm, none were found to be infected. Suspicion therefore centres on sow Z which commenced to be made into sausages on January 9th, on which day also the sausages were first sold, the last probable date of sale being January 18th, but it is considered as being improbable that this date was ever reached, having regard to the local demand.

Pig Z was a sow bred by a local pig keeper, and his premises were inspected on March 2nd. He has two piggeries, one situated behind his house in a populous part of the town and the other perhaps a mile away. The former consists of stys in an unpaved, undrained yard at the back of the dwelling house. Here were twenty pigs of varying ages kept under unfavourable conditions. The latter piggery was situated on high ground in open country, and consisted of a small field where fifteen pigs were kept in a number of lean-to sheds. None of the thirty-five pigs appeared to be unwell ; there was no history of recent losses among them.

Three ill-conditioned cats were seen on these premises, and it is to be noted that these cats were strays and not regularly fed by the occupier. Unfortunately, it was not possible to secure rats from either premises, but the three cats were destroyed and on examination one was found to show marked evidence of trichinosis. In this connection the second piggery is situated fairly close to the refuse dump of the Urban District Council, and out of a total of 166 rats obtained from this dump 14 were found to be trichinosed.

From the evidence obtainable, Colonel Maddock was of the opinion that the source of the Penrith outbreak was the sow Z killed on January 8th, 1941, from this piggery.

The following report was received from Mr. J. A. Sedgwick, Additional Sanitary Inspector, Penrith Rural District Council, upon examination of rats and cats obtained from various premises in the Penrith Urban, Rural, and North Westmorland Rural Areas :—

23rd March, 1941.

Dear Dr. Gavin,

TRICHINOSIS.

I have carried out microscopical examination of rats obtained from various premises as follows :—

<i>Premises.</i>	<i>Rats obtained.</i>
Penrith Urban Area—	
Town Refuse Dump, Ballast Pit	166
Round Thorn, Penrith (Farm)	29
Fletcher's Knackery, Penrith	22
Penrith Abattoir	1
Penrith Rural Area—	
Lancaster, Edenhall, Penrith (Farm)	18
North Westmorland Rural Area—	
Penrith Sewerage Works	4
Wood, Bolton, Penrith (Farm)	7

With the exception of rats obtained from the Town Refuse Dump, all rats examined microscopically showed no trace of the disease.

Fourteen of the 166 rats obtained from the Refuse dump were found to be infected with trichina, giving a percentage infection of 8.43.

From the period March 3rd to 10th, 83 rats were obtained from the above source, but only three were found to be positive, but from 12th March to 23rd March a further 83 rats were obtained, of which eleven were positive. The town refuse dump was systematically searched for rats during this period, and it was observed that certain portions of the tip were very heavily infected whilst other portions yielded negative results.

In addition, three cats were obtained from a local piggery, one of which had a wide-spread infection, and a cat obtained from a rural piggery yielded negative results.

(Signed) J. A. SEDGWICK.

I am indebted to Dr. Paul B. Beeson of the American Red Cross—Harvard Field Hospital Unit, who has very kindly supplied me with the following data for this report :—

“With regard to the skin tests that Colonel Maddock and I made in Penrith on 5th, 6th and 7th May, 1941, the results were as follows :—

Of twenty-two patients on whom a clinical diagnosis of trichinosis was made, the skin tests were positive in every case.

Twenty-six persons were tested because they were either relatives of known cases or were connected with the two pork butchers concerned. In this group 5 positive reactions were obtained.

Twenty-seven other persons were tested, and from this group three positive reactions were obtained.

Of the eight positive reactions contained in the latter two groups a suggestive history of illness at the time trichinosis was prevalent was obtained in every case but one, and I believe that the other seven represented mild cases of trichinosis. I think it is fair to presume that in addition to the fifty odd recognised cases of trichinosis which occurred in Penrith, there must have been many more—perhaps several hundred—mild illnesses also due to trichinosis.”

(Signed) PAUL B. BEESON, M.D.

Observations and Conclusions.

The definite cause of the Penrith outbreak was certainly due to the consumption of sausages prepared from sow X.

The question then arises—how was sow X infected? The answer to this question must remain conjectural, but infection can be attributed to one or other of the following :—

- (a) This sow may have caught a rat infected with trichinosis and eaten it.
- (b) By eating pig swill infected from a trichinosed rat's excreta.
- (c) By consuming pig swill infected from a trichinosed cat's excreta, and in this connection one cat out of three examined from this piggery was found to be extensively trichinosed.
- (d) By eating pig swill containing infected pig flesh.

It must be again emphasized that pig swill may be insufficiently sterilized or may be infected after sterilization by allowing rats or other animals to have access to it.

It is interesting to note that out of 50 recognised cases no less than 39 were females. The only children concerned were a girl of 11 years of age and another girl aged 13 years. As females prepare the food in the household they are more liable to have an opportunity of nibbling raw sausages in the course of cooking. It is also to be noted that no other pig product apart from sausages appeared to be implicated. In the invaded houses, about 144 persons ate of the particular sausages that were suspected and one out of 3.8 consumers were known to have developed clinical trichinosis.

No subsequent cases of trichinosis were notified.

The clinical picture may be confused with enteric fever, influenza, rheumatism or pneumonia. It is probable that an article on trichiniasis which appeared in the British Medical Journal of Saturday, 8th February, 1941, was responsible for the detection of the Penrith outbreak, and thus a retrospective diagnosis was made by the doctors concerned.

The disease is apparently notifiable as a type of food poisoning under Section 17 of the Food and Drugs Act, 1938.

It may be asked why the disease had not been detected during the routine inspection of meat at the municipal slaughterhouse, Penrith, and in this connection it must be stated that this disease can only rarely be detected by the ordinary methods of meat inspection. Microscopical or trichinoscopic examination is necessary as even a hand lens would not necessarily afford a satisfactory examination. Since the outbreak, pigs received at the abattoir for slaughter from piggeries in the suspected area have been examined microscopically.

The main factor in prevention is, of course, the adequate cooking of sausages and other pork foods.

Other important factors are the extermination of rats and the destruction of their carcasses by incineration, the sterilisation of pig swill as required by the Food and Mouth Order, 1938, and the prevention of fouling of pig swill by excreta of rats or cats subsequent to sterilisation.

RATS AND MICE DESTRUCTION.

Practical experience in this area has demonstrated that it is unwise to concentrate solely on rat week in November, and, although Autumn is undoubtedly the best time to carry out such work, endeavours are made to conduct a continuous offensive against rats and mice throughout the year.

During inspection of farms and other premises in various parts of the district, evidence of rat infestation have been frequently found and the occupiers have been warned accordingly.

Arrangements have been made with the Cumberland County Council to maintain a regular supply of rat poison in the Council Offices all the year round for distribution free of charge to occupiers of rat infested premises. This service is now well known throughout the area, and we have numerous applications for rat poison every week.

PREVALENCE OF, AND CONTROL OVER, INFECTIOUS AND OTHER DISEASES.

A Summary of the Notifiable Diseases (excepting Tuberculosis) is as follows :—

1941—NOTIFIABLE DISEASES (except Tuberculosis).

Diseases.	AGES.										TOTAL.	Admitted to Isolati'n Hosp.	Deaths.
	-1	1-	2-	3-	4-	5-	10-	15-	20-	35-	45-	65-	
Smallpox
Scarlet Fever	1	4	3	2	1	1	..	9	..
Diphtheria	1	..	1	..	..	2	..
Enteric Fever
Paratyphoid B Fever	2	..	..	..	..	2	..
Puerperal Pyrexia	2	..	..	..	..
Primary or Influenzal Pneumonia	2	1	1	..	2	2	3	2	1
Erysipelas	1	2	..	1	..	..
Ophthalmia Neonatorum
Cerebro-spinal Fever	1	..	..	..	..	1	2	..
Acute Anterior Poliomyelitis
Dysentery, Bacillary	1	..	1	..	..	..	..	..	..	1	1
Measles	1	..	1	..	..	1	..	..	..	..	..	..	..
Whooping Cough	4	5	6	9	2	36	3	..	..	..	..	..	..
											Tot als	108	

1 case of Cerebro-spinal Fever admitted Carlisle Isolation Hospital,

Scarlet Fever.

Twelve cases were notified in 1941 as compared with fourteen in 1940. Four cases occurred in one household at Blencowe. Apart from this small localised outbreak, eight other cases were scattered throughout the district. There was no actual epidemic. Nine cases were removed to the Isolation Hospital, and no deaths were recorded. The cases were moderately severe, and a large incidence of otitis media and cervical adenitis was noted.

Diphtheria.

One definite case occurred in a male patient aged 34 years. The only other case notified was not a case of clinical diphtheria. This child, aged 10 years, who had been immunised in 1937, was only a temporary carrier.

ARTIFICIAL IMMUNISATION AGAINST DIPHTHERIA.

All the Schools in the area were circularised and the anti-diphtheria campaign advertised as widely as possible. The numbers of children immunised were as follows :—

School.	No. of Children Inoculated.	
	School Age.	Pre-School Age.
Ivegill	62	10
Calthwaite	23	1
Croglin	22	Nil
High Hesket	59	19
Sowerby Row	13	1
Culgaith	26	4
Great Salkeld	24	8
Ainstable	17	Nil
Skirwith	22	Nil
Gamblesby	15	2
Armathwaite	28	7
Newbiggin	23	1
Lazonby	34	14
Hutton Roof	12	4
Dacre	21	2
Mungrisdale	10	2
Plumpton	16	7
Watermillock	10	8
Matterdale	28	6
Langwathby	26	15
Threlkeld	35	12
Hutton Marr	22	6
Stainton	29	2
Skelton	30	5
Renwick	20	6
Melmerby	19	5
Hunsonby	15	7

School.	No. of Children Inoculated.	
	School Age.	Pre-School Age.
Penruddock	32	2
Kirkoswald	37	12
Ousby	9	8
Maughanby	17	3
Greystoke	29	5
Lycee Francais	72	Nil
Total	857	184

Paratyphoid B Fever.

On 19th June, 1941, a girl (11 years of age) who attends Penrith Grammar School was notified as a case at Lazonby. On 11th July, 1941, a boy (aged 14 years) was notified at Skirwith. He was attending a School at Carlisle. The source of infection could not be ascertained in either of these two cases. Enquiries were made at various bakeries, etc., and the patient's places of refreshment, but without result.

Measles.

Only three cases were recorded in 1941 as compared with 178 cases in 1940.

Whooping Cough.

This disease was epidemic during the Spring months and also during July and August, the incidence falling during the Autumn months.

Bacillary Dysentery (Flexner X).

On Monday, 27th October, two cases of bacillary dysentery (Flexner X as reported by the Pathological Laboratory, Cumberland Infirmary, Carlisle) were notified from Lazonby Hall, occurring in two female children, aged $4\frac{1}{2}$ and $2\frac{1}{2}$ years respectively.

From enquiries made it appeared that on 28th September, 1941, a female farm servant came home to Renwick from Castle Carrock, and on the following day was taken ill with severe diarrhoea and sickness accompanied by fever. On 2nd October her brother was similarly affected, and her mother (Mrs. X) was also slightly ill.

On 3rd October, a sister of the first case, together with her infant daughter, of Lazonby Hall Cottages, visited Mrs. X at Renwick. On 9th October this sister and her child were also taken ill, and since then fourteen other cases have occurred in the vicinity of Lazonby Hall and Lazonby Hall Cottages; the last case occurred on the 25th October.

The places affected were :—

- | | | | |
|-----|------------------------|-------|-------------------------------|
| (1) | Renwick | ..... | Three cases. |
| (2) | Lazonby Hall | ..... | Four cases. |
| (3) | Lazonby Hall Cottages | ..... | Seven cases in four Cottages. |
| (4) | Cotehill Farm, Lazonby | ..... | Five cases. |

With one exception (at Lazonby Hall Cottages) all milk is obtained from Cotehill Farm, Lazonby. The other, who is employed as cowman at Woodend Farm, Lazonby, receives his milk from his employer.

From information received, it appears that similar illnesses had been occurring in the area of the Border Rural District Council at Castle Carrock (where the first case was employed) and at Heads Nook.

There, therefore, appears to be a direct source of infection from Castle Carrock to Renwick, and from thence to Lazonby Hall Cottages.

Lazonby Hall has a water carriage system, but the Hall Cottages and Farm have pail closets. There is one communal ashpit for five cottages and one ashpit for the farm.

Water is supplied from the main of the Penrith Rural District Council.

It is possible, therefore, that the disease in the first place was spread by fly infestation from the cottages to the adjoining farm, and might then have been spread by further fly infestation, or, more likely, by infection of the common milk supply by a missed case or a temporary carrier, but upon examination by the Pathologist at the Cumberland Infirmary, Carlisle, the milk was found to be negative for the Coli-typhoid Group.

The two domestic servants at Lazonby Hall were probably infected by direct contact with the two children at the Hall.

On 29th November, 1941, an isolated case was posthumously notified at Great Salkeld.

Cerebro-spinal Meningitis.

On 3rd April, 1941, an evacuee (female, aged 7 years) from Glasgow was notified at Troutbeck. She was a very severe case and fortunately made an excellent recovery at Fairhill Isolation Hospital.

On 14th December, 1941, another case was admitted to the Carlisle Isolation Hospital from Newbiggin, Heads Nook, this case being incorrectly notified to the Border Rural District Council.

TUBERCULOSIS.

No action has been necessary in respect of tuberculosis amongst persons employed in the milk trade, or under Section 172 of the Public Health Act, 1936, relating to the compulsory removal to Hospital of persons suffering from tuberculosis.

The total number of cases on the register at 31st December, 1941, is 30, a similar number to that at the end of 1940. There were six deaths from tuberculosis, and of these only two had been notified in this district. One case was an evacuee from Newcastle, and another occurred at Preston.

Ten new cases were added to the Register in 1941 and five of these were transferred notifications from other areas, including three evacuees. Thus war conditions tended to increase the number of cases of this disease within the area.

1941—TUBERCULOSIS CASES.

AGES.	New Cases.				Deaths.			
	Respiratory		Non-Respir-		Respiratory		Non-Respir-	
	M	F	M	F	M	F	M	F
To One year	—	—	—	—	—	—	—	—
1 to 5 years	—	—	1	—	1	—	—	—
5 to 15 „	1	—	1	—	—	—	1	—
15 to 25 „	—	1	—	—	—	—	—	—
25 to 35 „	1	—	—	—	2	—	—	—
35 to 45 „	—	3	—	—	1	—	—	—
45 to 55 „	1	1	—	—	—	—	—	—
55 to 65 „	—	—	—	—	—	—	—	—
65 and upwards	—	—	—	—	—	1	—	—
TOTALS	3	5	2	—	4	1	1	—

Number of cases on the Register at the end of the year is 30, viz. :—

Males.		Females.	
Pulmonary.	Non-Pulmonary.	Pulmonary.	Non-Pulmonary.
5	..... 6	16	..... 3

CAUSES OF DEATHS AS GIVEN BY THE REGISTRAR-GENERAL.

	Males.	Females.	Total.
Pulmonary Tuberculosis	4	1	5
Other Forms of Tuberculosis	1	—	1
Cancer, Buccal Cavity and Oesophagus	3	—	3
Cancer, Stomach and Duodenum	3	—	3
Cancer, Breast	—	1	1
Cancer, All Other Sites	2	4	6
Diabetes	—	1	1
Intracranial Vascular Lesions	12	8	20
Heart Disease	20	13	33
Other Diseases of Circulatory System	8	2	10
Bronchitis	—	2	2
Pneumonia.....	5	2	7
Other Respiratory Diseases	1	2	3
Ulcer of Stomach or Duodenum	2	—	2
Other Digestive Diseases	1	1	2
Nephritis	1	1	2
Premature Birth	4	1	5
Congenital Malformation, Birth Injuries and Infant Diseases	2	2	4
Suicide	1	—	1
Road Traffic Accidents	2	2	4
Other Violent Causes	1	2	3
All Other Causes	13	9	22
	—	—	—
	86	54	140
	—	—	—